REMARKS

The present amendment is in response to the Office Action dated April 6, 2006. Claims 1-12, 14-34, and 36-44 are now present in this case. Claims 1 and 23 have been amended.

Claims 1, 3, 5, 6, 8-12, 14-23, 25, 27, 28, 30-34, and 36-44 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of U.S. Patent No. 6,223,041 to Egner et al. and U.S. Patent No. 5,912,884 to Park et al. The applicants respectfully traverse this rejection and request reconsideration.

The Office Action asserts, at pages 2-3, that Egner et al. discloses a method of allocating resources in a network comprising "accessing data from a fixed wireless loop network having a plurality of stations which are each associated with a plurality of remote units, at least a portion of the plurality of remote units being capable of receiving communication services from more than one of the plurality of stations, but assigned to receive communication service from the associated station (see fig. 2; abstract; col. 2, lines 38-67; col. 4, lines 48-67)." With the exception of each base station being associated with a plurality of remote units, the assertions contained within the Office Action are incorrect. Egner et al. never mentions a wireless local loop and does not describe any process by which remote units are capable of receiving communication services from more than one of the plurality of stations. The only mention of communications between stations is interference that is analyzed in Egner et al. That is, communication between a remote unit and a base station in one cell may cause interference between a remote unit and its associated base station in another cell. This interference cannot be construed as describing a remote unit "capable of receiving communication services for more than one of the plurality of stations."

None of the sections of Egner et al. support the assertions cited in the Office Action on pages 2-3. Figure 2 illustrates mobile units within nearby cells generating interference within a subject cell (see Figure 2 and column 3, lines 4-7). The abstract, column 2, lines 38-67, and column 4, lines 48-67 describe channel reassignment, but do not ever consider the possibility of mobile units capable of communication with more than one base station. Indeed, Egner et al. teaches directly

away from the claimed invention by describing a process of allocation of frequency spectrum (*i.e.*, channels) between cells. (See column 3, lines 37-39.) If one cell becomes overloaded, more channels are assigned to that cell to accommodate the increased traffic load. Egner et al. never describes a transfer of remote units from one cell to another to handle an overload. Indeed, Egner et al. never describes the transfer of remote units from one cell to another for any purpose. Thus, Egner et al. does not provide any of teachings asserted in the Office Action.

The combination of Egner et al. and Park et al. does not suggest the claimed invention. The inapplicability of Egner et al. has already been described above. That is, Egner et al. discloses a technique for allocating frequency spectrum between cells as a means of accommodating overloads. This teaches directly away from the concept of transferring remote units from one cell to another. Park et al. does address the concept of transferring remote units from one cell to another albeit in a completely different manner than that recited in the claimed invention. One skilled in the art would not combine Egner et al., which teaches the transfer of frequency channels to an overloaded cell, with Park et al., which teaches the transfer of remote units away from an overloaded cell.

Park et al. analyzes the loads on individual cells. When an overloaded cell is identified, Park et al. discloses a technique for analyzing nearby cells to identify an underutilized cell. When an underutilized cell has been identified, the technique disclosed by Park et al. includes instructing the underutilized cell to increase its transmission power, which effectively increases the size of the cell. This is illustrated in Figures 3A-3B of Park et al. The overutilized cell 88 has been identified and an adjacent cell 44 has been identified as an underutilized cell, as shown in Figure 3A and described at column 4, lines 17-67. When the underutilized cell increases its transmission power, the result is illustrated in Figure 3B. The theory in Park et al. is that the enlarged cell will now encompass additional remote units from the previously overloaded cell.

The hope in Park et al. is that enough remote units will be transferred to the underutilized cell to relieve the overload condition. However, there are a significant

number of drawbacks with this approach. First, Park et al. never identifies any specific remote unit as reassignable from the overutilized cell to the underutilized cell. Simply expending the size of the underutilized cell may or may not relieve congestion in the overutilized cell. That is, the overutilized cell may have few remote units or even no remote units in the vicinity of the underutilized cell. Therefore, expansion of the underutilized cell may or may not cause remote units to be handed off from the overutilized cell. On the other hand, there may be a large number of remote users in the vicinity of the underutilized cell that are handed off to the underutilized cell after the cell size expansion. Thus, the previously underutilized cell may now be overloaded.

Second, Park et al. is used with a CDMA network. (See column 1, lines 6-11.) An increase in forward link power for the underutilized cell will also cause a significant increase in interference for other cells, making this approach unworkable. Thus, Park et al. discloses an inoperative system.

Thirdly, although Park et al. does not address this concept, it is clear that the newly expanded cell also encroaches on other adjacent cells. The effect of this expansion will cause remote units from other adjacent cells to be handed off to the newly expanded cell thus increasing the possibility of overloading the newly expanded cell.

Finally, Park et al. does not identify individual units as being capable of reassignment and initiating such reassignment to relieve an overloaded condition. Park et al. expands the cell size of an underutilized cell and relies on the possibility that remote units in the previously overloaded cell will now identify the expanded cell as the best base station with which to communicate and execute a handoff.

In sharp contrast to the combination of Egner et al. and Park et al., claim 1 of the present invention is directed to a method that recites *inter alia* "identifying one of the plurality of remote units assigned to the potentially overloaded station as re-assignable to a substitute station" as well as "reassigning the identified remote unit to the substitute station." Finally, claim 1 recites "repeating the identifying and reassigning of remote units until the potentially overloaded station is no longer in an overload status." The combination of Egner et al. and Park et al. never identify individual remote

units as reassignable from an overloaded station to a substitute station. As noted above, Egner et al. teaches the transfer of communication channels to the overloaded cell and does not even teach or suggest transferring remote units from the overloaded cell. With respect to Park et al., there is never an identification or reassignment of remote units to reduce the overload. Rather, Park et al. identifies an overload and expands the cell size of a nearby underutilized cell.

Park et al. relies on conventional cell phone technology to handoff remote units that are now located within the newly expanded cell. The Office Action appears to equate the conventional cell phone handoff process with the claim steps of identifying remote units as reassignable and reassigning the identified remote units. This is incorrect. In a typical cell phone network, a mobile unit at the boundary areas between cells may be able to communicate with more than one cell. Each remote unit constantly searches for the "best" base station with which to communicate and, if necessary, will initiate a handoff to switch from one base station to another. However, the normal cell phone operation does not apply to Park et al. In Park et al., there is no gradual transition from one cell to another that would cause a remote unit to initiate a handoff process. Rather, the relatively instantaneous change in transmission power results in a relatively instantaneous expansion of the cell size of the underutilized cell (*i.e.*, cell 52 in Figure 3B of Park et al.). Any remote unit that may have been near the boundary prior to cell expansion may no longer be capable of communicating with more than one station. Because of the abrupt transition in cell size, a remote unit previously capable of communicating only with the overloaded cell may now be capable of communicating only with the underutilized cell due to interference caused by the sudden increase in transmission power. Even if, *arguendo*, the normal cell phone handoff procedure is similar to identifying a remote unit assigned to an overloaded station and reassigning the identified unit to a substitute station, the combination of Egner et al. and Park et al. do not suggest any process of repeating the identifying and reassigning of remote units until the potentially overloaded station is no longer in an overloaded status. As discussed in detail above, Park et al. never identifies individual stations as reassignable, but merely expands the cell size of a nearby underutilized cell with the vague hope that

enough remote units will be handed off to the underutilized cell. This does not suggest any step of identifying and reassigning remote units that are reassignable and repeating the process until the potentially overloaded station is no longer in an overloaded status, as recited in claim 1. Accordingly, claim 1 is clearly allowable over the combination of Egner et al. and Park et al. Claims 2-12, and 14-22 are also allowable in view of the fact that they depend from claim 1, and further in view of the recitation in each of those claims.

Claim 23 is directed to a signal bearing medium containing instructions for assigning remote units in a network. Claim 23 also recites identifying a remote unit as assignable to a substitute station, reassigning the identified remote unit to the substitute station, and repeating the process of identifying and reassigning until the potentially overloaded station is no longer in an overloaded status. As discussed above with respect to claim 1, the combination of Egner et al. and Park et al. do not teach or suggest such a process. For the sake of brevity, those arguments need not be repeated herein. However, as noted above, Park et al. does not identify and reassign remote units until a potentially overloaded station is no longer in an overloaded status. Park et al. simply expands the cell size of a nearby underutilized cell in the hope that some remote units will be handed off to the newly expanded cell. This is significantly different from the techniques recited in claim 23. Accordingly, claim 23 is clearly allowable over the combination Egner et al. and Park et al. Claims 24-34 and 36-44 are also allowable in view of the fact that they depend from claim 23, and further in view of the recitation in each of those claims.

Claims 2, 4, 7, 24, 26, and 29 stand rejected over the combination of Egner and Park combined with U.S. Patent No. 5,293,640 to Gunmar et al. The applicants respectfully traverse this rejection and request reconsideration. The Office Action cites Gunmar et al. as disclosing an analysis in a theoretical network. However, the combination of references do not teach or suggest the identification and reassignment of remote units and repeating the identifying and reassigning of remote units until the potentially overloaded station is no longer in an overloaded status, as recited in claims 1 and 23. Therefore, claims 2, 4, and 7, which depend from claim 1,

are not obvious in light of the combination of Egner et al., Park et al., and Gunmar. Similarly, claims 24, 26, and 29, which depend from claim 23, are not obvious in light of the combination of Egner et., Park et al., and Gunmar.

In view of the above amendments and remarks, reconsideration of the subject application and its allowance are kindly requested. The applicants have made a good faith effort to place all claims in condition for allowance. If questions remain regarding the present application, the Examiner is invited to contact the undersigned at (206) 628-7640.

Respectfully submitted,
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